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Requirements for dimmable DALI control gears for fluorescent lamps and LED

Version 5

Manufacturer: **Inventronics GmbH** **Berliner Allee 65** **86153 Augsburg, Germany**	**Type / description:** **ECG-type: OT 40_170-240_1A0 4DIM NFC G3 CE (4062172218955)** **Date: 12.10.2023**		**Manufacturer information Complies: YES/NO**
Features:	**CEAG data:**	**Explanation:**	
Control gear suitable for a DC voltage range:	**186V - 260V DC (for Lead-Battery)**	Possible voltage range of the battery in emergency mode. *(Not for AT-S$^+$ Systems required)*	**Yes**
Control gear compatible with the switch-over time of the system?	**Switch-over time: 180 ms - 450 ms**	Typical switch-over time of CEAG systems between mains supply and emergency power supply	**Yes**
Starting behavior of the control gear:	**Stable current consumption after less than 1.6 sec. maximum.**	A stable operation of the control gear after 1.6 seconds of start up is required for the right functionality of the individual monitoring. With max. 20 luminaires for one current circuit: Δ I in sum < 250 mA are allowed	**Yes**
Control gear compatible with CEAG STAR-Technology:	**Phase-cut telegram (PAT): max. 30 phases (half waves) with max. 60° phase-cuts**	During the CEAG STAR switching process, up to 30 half-waves are cut at a maximum of 60°. The control gear must not exhibit any malfunctions such as switching off, flickering	**Yes**
only for flourescent lamps: Control gear complies with the standard:	**DIN EN 60929**	AC and/or DC-supplied electronic control gear for tubular fluorescent lamps - Performance requirements	**Not relevant**
only for flourescent lamps: Control gear complies with the standard:	**DIN EN 61347-2-3 (incl. Attachment J)**	Particular requirements for AC and/or DC supplied electronic control gear for fluorescent lamps	**Not relevant**
only for LED: Control gear complies with the standard:	**DIN EN 62384**	DC. Or AC supplied electronic control gear for LED modules - Performance requirements	**Yes**
only for LED: Control gear complies with the standard:	**DIN EN 61347-2-13**	Lamp controlgear — Part 2-13: Particular requirements for d. c. or a. c. supplied electronic controlgear for LED modules	**Yes**
Fullfilled the standard:	**DIN EN 55015 (Measurement on AC And DC)**	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	**Yes**
Fullfilled the standard:	**DIN EN 61547**	Equipment for general lighting purposes — EMC immunity requirements	**Yes**
Fullfilled the DALI standards:	**DIN EN 62386-101 /-102 / -207***	**Control gear must have the DALI Logo***	**Yes**

Note: VDE 0108 is not a standard for ECG, marking is not applicable

Features:	**CEAG-Data:**	**Explanation:**	**Manufacturer information:**
Important for function test! According to IEC 62386 Part 102 Support of : **DALI command 145** (Query Control Gear) **DALI command 146** (Query Lamp Failure)	**According to IEC 62386 Part 102**	To detect a lamp failure, the V-CG-SB.1 module send DALI command queries (145/146) to the DALI LED driver. These DALI commands are necessary to ensure the lamp failure detection, and must be support by the control gear.	**Yes**
Important for DC operation: DALI light level	**In case of locked DALI light level in DC operation (EOF=Emergency Output Level), the V-CG-SB.1 can not change the light level !**	In DC-emergency case the DALI-Light Level is locked to prevent unwanted changes of the luminous flux.	**Locked**
Important for lighting design: If DALI-Light level is locked, the value of the preset DC-Lightlevel (in %) is required		Pre-set DC-Light Level e.g. 15% (DALI-value 185 for logarithmic dimming curve)	**75%**

Note: Important for the planning - Max. no. Of luminiares per circuit

Important for the contact load SKU: Max. inrush current each converter/luminaire in AC-operation:	**Max. permitted inrush current per circuit:** **SKU 2 x 3A (CG) => 120 A** **SKU 1 x 6A (CG) => 180 A** **SKU 4 x 1,5A CG-S => 60 A** **SKU 2 x 3A CG-S => 250 A** **SKU 1 x 6A CG-S => 250 A** **SOU CG-S // S$^+$ => 250 A** **SU S$^+$ => 250 A**	30.2A/186us per pcs. The declaration of the inrush current of the luminaire is important, to calculate the max. possible luminaires on one circuit, to consider the max. contact load limitation of the circuit.

Luminaires, which are used for emergency lighting, must be according to the standard DIN EN 60598-2-22 (particular requirements - Luminaires for emergency lighting)

*Control of V-CG-SB.1 to the DALI LED driver is 100% done via DALI-commands according to IEC 62386-101 /-102 so the DALI LED driver must sign with the DALI logo

Max. 1 DALI- Driver to wire with 1 V-CG-SB.1

In use of manifold ballasts, the different lamp failure detection of the manufacturer must be consider! Some devices don`t detect a failure if one lamp is defect.

Philip Gie

12.Oct.2023

Manufacturer: Inventronics GmbH Berliner Allee 65 86153 Augsburg, Germany www.inventronicsglobal.com	Product: **OT 40_170-240_1A0 4DIM NFC G3 CE** **(AM41129)**	**Inventronics GmbH**

Table 1

			AC-operation				DC-Operation (For DALI Devices @ default DC Dim level e.g. 15%)			
Values for load range			**189VAC/50Hz Itrms_in (mA)**	**230VAC/50Hz Itrms_in (mA)**	**240VAC/50Hz Itrms_in (mA)**	**264VAC/50Hz Itrms_in (mA)**	**186VDC Idc_in (mA)**	**216VDC Idc_in (mA)**	**240VDC Idc_in (mA)**	**260VDC Idc_in (mA)**
Min. Load /mA	Uout= Iout=	13.6 V 150.2 mA	not supported (25.5)	27.7	28.3	31.4	16.4	14.1	12.9	12.3
	P=	2.1 W	PF: 0.647	PF: 0.507	PF:0.479	PF: 0.388	PF: NA	PF: NA	PF: NA	PF: NA
Mid. Load /mA	Uout= Iout=	14.7 V 1074mA	not supported (110)	89.5	87.0	80.8	110.0	92.8	83.2	78.4
	P=	15.9 W	PF:0.975	PF: 0.974	PF:0.971	PF:0.956	PF: NA	PF: NA	PF: NA	PF: NA
Max. Load /mA	Uout= Iout=	37.9 V 1077 mA	not supported (255.4)	209.7	218.4	201.6	189.9	161.6	144.5	133.0
	P=	40.9 W	PF:0.972	PF: 0.966	PF:0.886	PF:0.866	PF: NA	PF: NA	PF: NA	PF: NA
Short/Open Load			not supported (17.3)	19.9	20.5	21.8	0.7	0.6	0.6	0.6
			PF:0.05	PF: 0.04	PF:0.04	0.04	PF: NA	PF: NA	PF: NA	PF: NA

Remarks:

1.) This table shows the currents consumption of the driver at three different operating points (Pmax, Pmid, Pmin) for AC and DC operation.
2.) This table is intended for rough design desicions . It is not a replacement for individual functional measurments!